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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,394	03/07/2002	Atsushi Yokouchi	Q68888	9620

7590 07/19/2005

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EXAMINER

JOHNSON, JERRY D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/091,394	YOKOUCHI ET AL.	
	Examiner	Art Unit	
	Jerry D. Johnson	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-9,11-15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9,11-15 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 4-10, 11-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokouchi et al. in view of Heimann et al.

Yokouchi et al., U.S. Patent 5,840,666, teach a rolling bearing having sealed therein a grease composition comprising a base oil, a urea thickener, and an inorganic filler having an average particle size of not greater than 2 micrometers (column 3, lines 15-19). The inorganic filler is preferably used in an amount of 0.05 to 15% by weight (column 4, lines 21-23). The base oil preferably has a kinetic viscosity of 10 to 400 mm²/sec, particularly 20 to 250 mm²/sec, especially 40 to 150 mm²/sec at 40°C (column 5, lines 53-60). The grease composition can further contain one or more additives in a total amount of up to 20% by weight (column 6, lines 35-39). While Yokouchi et al. teach the addition of further additives, Yokouchi et al. differ from the instant claims in not teach the addition of a pH adjustor.

Heimann et al., U.S. Patent 6,010,984, teach lubricant and grease compositions which imparts corrosion and microbial resistance, and a high dropping point (column 2, lines 12-15). The pH of the grease can be tailored to be compatible with the metal surface which is contacted with the grease or gel (column 5, lines 59-60). The grease will typically have a pH that ranges from about 7 to about 14 (column 6, lines 2-3). The addition of conventional additives is taught in column 8, lines 5+.

A person having ordinary skill in the art, armed with the disclosure of Heimann et al., would have found it obvious to add a pH adjustor to the grease composition of Yokouchi et al. in order to adjust the pH to "about 7 to about 14" and tailor the grease to be compatible with the

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metal surface which is contacted with the grease with a reasonable expectation of enhancing the corrosion resistance of said composition.

Claims 1 and 4-10, 11-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naka et al. in view of Heimann et al. and Yokouchi et al.

On page 1 of the specification, under the heading Technical Field, applicants disclose

This invention relates to a rolling bearing and particularly a rolling bearing which is used under such a condition that water may seep in the lubricant or the bearing is affected by high temperature, high-speed rotation or vibrations and is suitable to electric parts and accessories of an automobile engine such as an alternator. (Emphasis added).

Column 1, lines 5-20 of Naka et al., U.S. Patent 5,728,659, teach

The present invention relates to a grease composition for rolling bearings. More particularly, it relates to a grease composition employed for rolling bearings in electrical components and accessory devices for automotive vehicles, such as alternators, electromagnetic clutches for car air conditions, idle pulleys, electric fan motors, or the like. (Emphasis added).

Naka et al., U.S. Patent 5,728,659, teach a grease composition for a rolling bearing comprising 10 to 60 parts by weight of a mixture of diurea compounds as a thickener based on 100 parts by weight of a base oil (column 2, lines 13-44). The base oil used in the grease is not particularly limited, and any oil used as a base oil for a lubricating oil may be used (column 5, lines 9-11). Base oils having a kinematic viscosity of preferably 40 to 400 mm²/s, more preferably 60 to 250 mm²/s, most preferably 80 to 150 mm²/s at 40°C is preferred (column 5, lines 11-18). The grease composition may optionally contain publicly known additives in order to further improve its properties (column 7, lines 31-33). These additives may be used alone or as a combination of two or more kinds. The amount of the additives to be added is not particularly limited, but usually not more than 20% by weight of the grease composition (column

7, lines 42-47). Naka et al. differ from the instant claims in not teaching the addition of a pH adjustor and inorganic particles having an average particle size of 2 micrometers or less.

Heimann et al., U.S. Patent 6,010,984, teach lubricant and grease compositions which imparts corrosion and microbial resistance, and a high dropping point (column 2, lines 12-15). The pH of the grease can be tailored to be compatible with the metal surface which is contacted with the grease or gel (column 5, lines 59-60). The grease will typically have a pH that ranges from about 7 to about 14 (column 6, lines 2-3). The addition of conventional additives is taught in column 8, lines 5+.

Yokouchi et al., U.S. Patent 5,840,666, teach a rolling bearing having sealed therein a grease composition comprising a base oil, a urea thickener, and an inorganic filler having an average particle size of not greater than 2 micrometers (column 3, lines 15-19). The inorganic filler reinforces the gel structure of the thickener and improves the film-forming properties of the grease (column 2, lines 57-62). The inorganic filler is not particularly limited as long as it is capable of reinforcing the gel structure formed of a thickener (column 3, lines 38-40). Specific inorganic filler are disclosed in column 3, lines 43-48). The inorganic filler is preferably used in an amount of 0.05 to 15% by weight (column 4, lines 21-23).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to add a pH adjustor as taught by Heimann et al. to the grease composition of Naka et al. in order to adjust the pH to "about 7 to about 14" and tailor the grease to be compatible with the metal surface which is contacted with the grease with a reasonable expectation of enhancing the corrosion resistance of said composition. Additionally, it would

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have been obvious to add an inorganic filler as taught by Yokouchi et al in order to reinforce the gel structure and film-forming properties of the grease composition.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13-15 and 17 are rendered indefinite by the recitation that the thickener is “selected from at least one of an aromatic diurea compound and a non-aromatic diurea compound” and additionally reciting that the aromatic amine residue and the non-aromatic amine residue are in the claimed relationship.

Applicant's arguments filed May 12, 2005 have been fully considered but they are not persuasive.

Applicants argue

Heimann et al. is not combinable with Yokouchi et al. The present claims are directed to rolling bearings, but such application is neither disclosed nor referenced in Heimann et al. For example, at column 2, Heimann discloses that his inventive grease/gel is used in environments where improved corrosion resistance is desired, for example, wire rope and strand used in a wide range of applications including automotive and marine end-uses (see col. 2 lines 39-43). On the other hand, like the present invention, the Yokouchi et al. primary reference is directly related to a rolling bearing. There is no discussion in Yokouchi et al of using the rolling bearing in a marine environment or environment where improved corrosion resistance is needed. Thus, there is no motivation to add a pH adjustor of Heimann to the rolling bearing of Yokouchi because Yokouchi et al does not call for protection from corrosive environments. (Remarks, page 8).

Applicants' argument lacks merit.

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Yokouchi et al. specifically teach that “grease for use in rolling bearings for automobiles has been required to have a long lubrication life, to hardly leak, and to have excellent low-temperature performance, anti-corrosion performance, and acoustic properties.” See column 1, line 66 to column 2, line 2. Accordingly, it would have been obvious to one having ordinary skill in the art to add a pH adjustor as taught by Heimann et al. to the grease composition of Yokouchi et al. in order to adjust the pH to “about 7 to about 14” and tailor the grease to be compatible with the metal surface which is contacted with the grease with a reasonable expectation of enhancing the corrosion resistance of said composition.

Applicants argue

Heimann describes an extensive list of additives, but does not describe or discuss particles comprising an inorganic compound having an average particle size of 2 μm or smaller as claimed. This is because one of ordinary skill would expect such particles to impair the corrosion resistance of the grease/gel of Heimann. This is just another reason why one skilled in the art would not add a pH adjustor of Heimann to the grease composition of Yokouchi. Thus, Yokouchi and Heimann are not properly combined against the present inventions Claims 1 and 11. (Remarks, page 9).

Applicants’ argument lacks merit.

Applicants’ argument is misplaced. The rejection of record is not predicated upon adding the inorganic compounds of Yokouchi et al. to the composition of Heimann et al. as argued.

Applicants’ argument also completely ignores the fact that Heimann et al., like Yokouchi et al. teach that the grease composition may contain “powdered extreme pressure agents” having “an appropriate limit on the maximum particle size” (column 4, lines 5-9 of Heimann et al.).

Applicants argue “Heimann and Yokouchi do not disclose the specific reaction film forming agents now required by Claim 9.” (Remarks, page 9).

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Notwithstanding applicants' argument to the contrary, Yokouchi et al. and Heimann et al. teach the addition of other additives, including, *inter alia*, the claimed film forming additives (See Yokouchi et al., column 6, lines 35-49; Heimann et al., column 3, line 52 to column 4, line 5).

Applicants argue claim 13 now requires a thickener selected from at least one of an aromatic diurea compound and a non-aromatic diurea compound where residues of these compounds have a specific range of molar ratios as defined in the claim and that this specific range of molar ratios is not disclosed by any of Yokouchi et al. and Heimann et al. (Remarks, page 10). Applicants' argument lacks merit.

Yokouchi et al. teach aromatic and non-aromatic diurea grease thickeners. See column 4, line 56 to column 5, line 51. Specifically disclosed thickeners include thickeners having the claimed molar ratios (Table 1). Furthermore, there is no evidence of record that the claimed ratio is critical or gives unexpected results.

Applicants argue "Heimann is not combinable with Naka et al for the same reasons that Heimann et al is not combinable with Yokouchi et al." (Remarks, page 11). Applicants' argument lacks merit for the same reason as cited above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

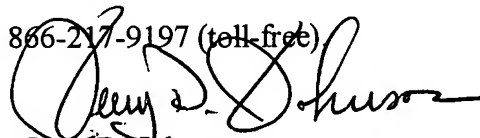
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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry D. Johnson whose telephone number is (571) 272-1448. The examiner can normally be reached on 6:00-3:30, M-F, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jerry D. Johnson
Primary Examiner
Art Unit 1764

jdj